

Allocation of *Sturnus melanopterus* to *Acridotheres*

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Sturnus melanopterus, commonly called the Black-winged Starling (Gruson 1976, Howard & Moore 1980, MacKinnon 1990, Walters 1980), is endemic to the Indonesian islands of Java and Bali, with some additional sightings on Lombok. Amadon (1943) placed *melanopterus* in *Sturnus* but its ecology and behaviour are poorly known and its relationships to other members of the starling family are unclear. In particular, Sieber (1978) suggested that it may be closely related to the endangered Bali Starling *Leucopsar rothschildi* and as the ranges of the two species now overlap he expressed concern that competition between them might impede the recovery of the Bali Starling. *melanopterus* has also been linked with the Black-collared Starling *S. nigricollis* in a genus *Gracupica* (Amadon 1943).

We studied a small introduced population of *Sturnus melanopterus* on St John's Island, Singapore, during a visit to that island on 27–29 November 1990. The aim was to gain basic information on its ecology and behaviour in order to throw light on its relationship with other family members. During this visit the island population comprised only seven individuals, six of which were clearly associating in pairs while the seventh bird was seen only once and appeared sick. Hails (1987) reported a population of about 50 birds: the reason for the decline is unclear although many may have been trapped to be sold as cage birds.

Habitat and feeding

In Java and Bali *Sturnus melanopterus* inhabits cultivated areas (de Wiljes 1957, Sieber 1978, Ash *in litt.*), fruit farms, fallow fields and open grass savannas (van Helvoordt *in litt.*) and grass lawns (MacKinnon 1990). In Singapore Hails (1987) considered it to be more arboreal than other mynas.

On St John's Island it was recorded feeding in three habitats, in trees, in grassland and on the beach. The birds fed singly, in pairs and on one occasion were seen feeding all together on the grass floor of open woodland. They frequently fed in association with Common Mynas *Acridotheres tristis*. In the morning and late afternoon they spent much time sitting and preening on a sea wall and one bird was seen to bathe in the sea. At dawn and dusk, they joined assemblies of Common and White-vented Mynas *A. javanicus* and Purple-backed Starlings *Sturnus sturninus*. Between about 1100 h and 1600 h the *S. melanopterus* could not be found and we presumed that they rested in trees out of sight.

In trees they ate nectar, fruit and insects. Nectar was taken from the small 'powder-puff' flowers of the Madras Thorn *Pithecellobium dulce*. Fruits taken were the small orange berries of *Fagraea fragrans* and larger, cherry-sized dark red fruits of *Eugenia longiflora*. In addition, one bird ate

a green unripe fruit from a flower stem of a Madras Thorn tree. This bird also fed by picking small insects from leaves and by prying into ripe pods of this tree, presumably eating insects although they might have been eating the white pulp which Wee (1989) describes as edible. It found a 5 cm mantid, identified as *Parkierodula venosa*, in the tree, flew to the ground and dismembered the insect on a mud mound, eating all but the wings. On several occasions birds were seen probing into the bases of terminal rosettes of *Casuarina* leaves where they presumably ate small insects: in doing this the birds demonstrated some agility, clinging on to very fine twigs and reaching out to the terminal rosettes.

In grassland *S. melanopterus* pecked at items among the vegetation and made dashes at more mobile prey. In open woodland they were also seen probing into soil close to a termite mound. On the beach they pecked at small items on the sand above the water line, and chased insects among *Ipomoea* at the top of the beach. One bird made dashes at small items left by retreating waves.

In the open woodland, one bird drank from a tree hole, clinging woodpecker-fashion to the trunk, supporting itself with its tail.

Voice and pair-bonding behaviour

The calls of *S. melanopterus* were loud and varied, and were of the same quality and often very similar to those of *Acridotheres tristis* and *A. javanicus*. They included a repeated *cha cha cha*, each note with a downward inflection, a throaty *tok* or *chok*, a harsh *kaar kaar*, a harsh drawn-out *kreeer*, a frequently given disyllabic *kishaa kishaa* and other whistles and squawks. On several occasions a high-pitched whistling *tsoowit* or *tsoowee* flight-call was given by birds which had been resting or preening, while a feeding bird was once heard to give a harsh *kaar* alarm-call on take-off.

Feeding bouts were often interrupted by bursts of calling. These often consisted of loud repetitive disyllabic calls very similar to those of *A. tristis*. They were given by one member of the pair with crest slightly raised and in many cases the mate responded by duetting.

Tok calls were often accompanied by bobbing of the head with the short crest erected and the cheek feathers puffed out. During prolonged preening and resting bouts on the sea wall in the morning and evening, members of pairs periodically came together to within about 0.5 m of each other; one individual occasionally bowed its head by pointing the bill down towards the breast and at the same time bobbed its body up and down. Similar behaviour, but more exaggerated, was seen in a pre-roost assembly when two birds sat close to each other in a tree; here, one bird raised its crest and bowed so that the bill touched the breast feathers. On another occasion, one member of a pair sang in a coconut tree, frequently bowing with its crest feathers raised; at each bow the bill was pressed into the breast feathers and the whole body was bobbed. These bowings appeared to elicit little response from the other member of the pair. Immediately prior to roosting at dusk, one pair sat on a branch facing in the same direction and with their bodies touching; they touched bills briefly but did not allopreen, although this behaviour was reported in captive birds (Harrison 1963).

Discussion

S. melanopterus is a heavily built starling, similar in size and shape to *A. tristis*. Like most species that are ascribed to *Acridotheres*, but unlike typical *Sturnus* (e.g. *vulgaris*, *cineraceus*), *S. melanopterus* has yellow legs, a patch of bare orbital skin (in this case yellow), black wings with a prominent white patch and a black tail with white tips to the feathers, particularly pronounced on the outer rectrices. In flight it is round-winged, rather than pointed-winged as in *Sturnus*, and its flight is more hesitant and butterfly-like, rather than direct. In all of these respects, therefore, *melanopterus* more closely resembles *Acridotheres* than *Sturnus*.

Our observations on the behaviour of *melanopterus* confirm a close affinity to *Acridotheres*. To the inexperienced ear the calls are practically indistinguishable from *A. tristis*. Association in pairs even when not breeding is typical of *A. tristis* (Sengupta 1982) and *A. javanicus* (Kang 1989), and even when larger flocks do occur, pairs are apparent. On St John's Island *melanopterus* pairs were less cohesive than Kang (pers. obs.) has found in *tristis* and *javanicus*, but non-breeding *Sturnus* typically associate in flocks in which pairs are not distinguishable. Pair-bond maintenance displays involving various forms of bowing are characteristic of *A. tristis* (Sengupta 1982), *A. javanicus* and *A. cristatellus* (pers. obs.) but are not used by typical *Sturnus* (Feare 1984).

On morphological and behavioural grounds we conclude that *melanopterus* should be taken out of *Sturnus* and assigned to *Acridotheres*. Its most common English name of Black-winged Starling should be replaced and, since most *Acridotheres* mynas have black wings, an appropriate name is White-breasted Myna.

The taxonomy of *Acridotheres* is currently confused and needs revision, especially in relation to the specific status of *fuscus*, *javanicus*, *mahrattensis* and *grandis*. Behavioural studies of other south-east Asian *Sturnus* may well suggest closer affinities to *Acridotheres*, and *burmannicus*, a little-known endemic of Burma and Thailand with outward resemblance to *melanopterus*, warrants particular study but *contra* and *nigricollis* should also be included in such a review. Harrison (1963) reported the latter performing bowing displays.

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A new race of the Sand Martin *Riparia riparia* from Israel

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The Sand Martin *Riparia riparia* is the second most common hirundine migrating through Israel after the Swallow *Hirundo rustica*. It is abundant in spring and also common in autumn throughout the Rift Valley. At Eilat, large numbers have been recorded moving northwards during the spring, with peak days of more than 20,000 birds. The Sand Martin does not breed in Israel but isolated breeding populations are found in the neighbouring countries of Egypt and northern Syria.

Between 1984 and 1988, Merav Gellert and H.S. ringed more than 5000 Sand Martins in Eilat during consecutive seasons, chiefly in spring. During this study, many birds which were trapped and examined were assigned to the nominate race, *riparia*, by virtue of their plumage colouration and larger size (wing length >100 mm). Also examined were a few individuals which differed by their smaller size (wing length 92–105 mm), paler upperparts, and more diffuse breast-band. These birds were considered to match the Central Asian race, *diluta*. In addition to these, other small Sand Martins (wing length 87.5–98.6 mm) which were noticeably darker above were also trapped regularly in spring in quite large numbers (often >10 birds per day). Initially these birds were identified as the race *shellei* (Nile valley, Egypt and northern Sudan) as their measurements were compatible with those given in Vaurie (1959) and Cramp (1988). In order to check the identity of the subspecies to which these birds belong, H.S. brought three specimens to The Natural History Museum, Tring, for comparison with other material collected at



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